

U. S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service, Southeast Fisheries Science Center  
P. O. Drawer 1207 Pascagoula, MS 39568-1207

Caribbean Reef Fish Survey

**NOAA Ship *Oregon II* Cruise R2-09-01 (285)**

## **Introduction**

The NOAA Ship *Oregon II* departed Pascagoula, MS on March 5, 2009 to conduct a Reef Fish survey around Puerto Rico and the US Virgin Islands. The *Oregon II* was scheduled to sail on March 3, 2009; however, the vessel was delayed due to mechanical problems with the hydraulics for the longline winch, pot hauler and the RHIB boat. After completing the transit to the Caribbean, on March 12, 2009, the vessel's controllable pitch propeller (CPP) was stuck in reverse during pickup of the second video station. As a result, the *Oregon II* was towed into San Juan, Puerto Rico. The repair took four days and the *Oregon II* departed San Juan on March 17, 2009 to continue the survey along the west coast of Puerto Rico. An eight-hour port call was made in Frederiksted, St. Croix on March 23, 2009 for logistic purposes. The USVI was then surveyed off the southwest coast of St Croix and off the northern and southern coasts of St. Thomas and St. John. The *Oregon II* made a final port call in Frederiksted on April 1, 2009 and departed April 2 for the return trip to Pascagoula, MS. The vessel returned to Pascagoula on April 8, 2009.

## **Objectives**

- 1) Assess relative abundance of reef fish along the insular shelves of Puerto Rico and the U.S. Virgin Islands.
- 2) Determine length frequency distributions of reef fish.
- 3) Collect biological materials from fishes for aging and reproductive tissues for life history studies.
- 4) Collect fin clips from captured fishes for DNA analyses.
- 4) Collect temperature, salinity, and dissolved oxygen profile data at each station.

## **Methods**

The NOAA Ship *Oregon II* departed Pascagoula, MS on March 5, 2009 to conduct the SEAMAP reef fish survey off Puerto Rico and the USVI. A stratified random design was employed to select sample sites. Strata were defined by depth (50 m – 60 m, 60 m – 90 m; 90 m – 120 m; and 120 m to 300 m) and region (Northern Puerto Rico, Western Puerto Rico, St. Croix, southern St. John/St. Thomas and northern St. John/St Thomas). Sampling gear included video camcorders, chevron fish traps and bottom longlines. The video camcorders used were Sony model PD170s in Gates underwater housings. Four camcorders were arranged orthogonally in an array. The camcorder array and fish traps were used during daylight hours. Camcorders were deployed no earlier than one hour after sunrise, with the last camcorder array retrieved one hour prior to sunset. The array was baited with squid and soaked on the sea bed for a minimum of 30 minutes. Chevron fish traps were deployed at the same sample sites as the cameras. The chevron fish trap measured 1.83 m x 1.83 m x 0.75 m with 3.81-cm mesh. The camcorder array was deployed and retrieved first followed by deployment of a fish trap. Fish traps were baited with squid

and soaked on the sea bed for one hour. All fish captured in the traps were identified, measured and weighed individually. Otoliths, gonads, and tissue samples were taken from snappers (Lutjanidae) and groupers (Serrinidae).

Bottom longlines were deployed during nighttime hours. Longline gear consisted of 925 m (1/2 mile) of 536 kg test monofilament mainline and 50 gangions, which were constructed of a snap, 3.7 m of 332 kg test monofilament leader and a 15/0 circle hook (Mustad, model # 39960D). Soak times were limited to one hour unless circumstances dictated otherwise. Specimens caught on longline gear were identified, sexed and body length/width and weight measured to the nearest mm and 0.1 kg, respectively. Fork length (FL) was measured on a straight line along the axis of the body from the tip of the snout to the posterior notch of the caudal fin. For those species lacking a posterior notch on the caudal fin, total length (TL) was measured on a straight line along the axis of the body from the tip of the snout to the posterior tip of the caudal fin while in a “natural” position. The disc width of batoids was measured on a straight line between the pectoral fin apices. When large specimens escaped prior to being landed body length/width was estimated. Males with fully calcified claspers that rotated 180° relative to normal position and had freely opening rhipidions were considered mature. The stomachs and reproductive tracts of several moribund specimens were examined to investigate parasite assemblages and reproductive status. Tags were deployed on sharks that were in viable condition. Tag numbers were entered in to the Mississippi Laboratories data base on a per tagging basis. Subsequent tag tracking (recovery reports) is conducted by the shark group at NMFS Panama City, Florida. Tags are printed with identification numbers and contact information.

CTD profiles were conducted at each site sampled with the camcorder array and bottom longline. A Seabird 911+ CTD was employed and measured temperature, salinity, dissolved oxygen, fluorescence and transmissivity profiles of the water column.

## Results

A total of 175 stations were sampled during the survey; 55 bottom longline sets, 57 traps and 63 video sites (Figure 1, Table 1). Only three stations were sampled along the northern coast of Puerto Rico, two video and one trap due to both lost sea-days caused by the mechanical problem with the CCP and inclement weather. Strong northerly winds made sampling along the northern coast of Puerto Rico impossible. Casts of the CTD array were not conducted at trap sites since these were deployed immediately after and at the same site as the video cameras. Additionally, the level-wind on the CTD winch stopped working on two occasions during the survey. It was repaired, but no CTD casts were made at one video site and two bottom longline sites (Table 1). The bottom longlines set at many of the selected sites located south of St. John and St. Thomas snagged on the seabed resulting in lost gear. Consequently, six of the original sites were subsequently moved into deeper water to depths greater than 300 m (Table 1).

A total of 11 fish species were captured in the fish traps (Table 2). Trap catch was dominated by blackfin snapper (*Lutjanus buccanella*) and lane snapper (*L. synagris*), and included vermilion snapper (*Rhomboplites aurorubens*), coney (*Cephalopholis fluva*) and red hind (*Epinephelus guttatus*). A total of 31 taxa, of which 27 were identified to the species level, were taken on the bottom longlines. Catch was dominated by smoothhounds (*Mustelus sp.*), blacknose shark (*Carcharhinus altimus*) and gulper shark (*Centrophorus sp.*). Longline catch also included red hind and lane snapper. Additionally, red grouper (*E. morio*), mutton snapper (*L. analis*), dog snapper (*L. jocu*) and silk snapper (*L. vivanus*) were captured; species not captured in the fish traps. Fishes captured on longlines, in general, were larger than those captured in fish traps (Table 3). A total of 53 sharks were tagged and released; 12 of the tags were steele dart head streamer tags, inserted just below the caudal fin, and 41 were plastic Roto-tags, punched

through the mid point of the dorsal fin (Table 3). Video tapes were returned to the SEFSC/NMFS Pascagoula Laboratory for viewing. Otoliths, gonads and tissue samples were collected from several species (Table 4). Otoliths and gonads were sent to the SEFSC for processing. Tissues samples were sent to Dr. Joseph Quattro, at the University of South Carolina, or archived in the NMFS repository in Charleston, SC.

**Cruise participants:**

Leg 1: 3/07 - 3/11/09: Transit Pascagoula, MS to San Juan, PR with overnight stay in San Juan.

Name	Title	Sex	Organization	Citizenship
Chris Gledhill	Field Party Chief	M	NMFS-Pascagoula, MS	USA
Kevin Rademacher	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Brandi Noble	Fishery Biologist	F	IAP-Pascagoula, MS	USA
Mark Grace	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
William Driggers	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Michael Hendon	Fishery Biologist	M	IAP-Pascagoula, MS	USA

Leg 2: 3/12 - 3/23/09: Survey Puerto Rico and transit to Frederiksted. The Oregon II was in San Juan for repairs on 3/13 -3/16.

Name	Title	Sex	Organization	Citizenship
Chris Gledhill	Field Party Chief	M	NMFS-Pascagoula, MS	USA
Kevin Rademacher	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Brandi Noble	Fishery Biologist	F	IAP-Pascagoula, MS	USA
Mark Grace	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
William Driggers	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Michael Hendon	Fishery Biologist	M	IAP-Pascagoula, MS	USA
Steve Curran	Parasitologist	M	GCRL	USA
Michael Andres	Student	M	Univ. So. Miss.	USA

Leg 3: 3/23 - 4/01/09: Port Call in Frederiksted, St. Croix and Survey USVI

Name	Title	Sex	Organization	Citizenship
Chris Gledhill	Field Party Chief	M	NMFS-Pascagoula, MS	USA
Kevin Rademacher	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Brandi Noble	Fishery Biologist	F	IAP-Pascagoula, MS	USA
Mark Grace	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
William Driggers	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Michael Hendon	Fishery Biologist	M	IAP-Pascagoula, MS	USA
Steve Curran	Parasitologist	M	GCRL	USA
Michael Andres	Student	M	Univ. So. Miss.	USA
Jill Hendon	Fishery Biologist	F	GCRL	USA

Leg 4: 4/02 - 4/08/09: Transit Frederiksted, St. Croix to Pascagoula, MS

Name	Title	Sex	Organization	Citizenship
Chris Gledhill	Field Party Chief	M	NMFS-Pascagoula, MS	USA
Kevin Rademacher	Fishery Biologist	M	NMFS-Pascagoula, MS	USA
Brandi Noble	Fishery Biologist	F	IAP-Pascagoula, MS	USA
William Driggers	Fishery Biologist	M	NMFS-Pascagoula, MS	USA

**Submitted by:**

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Dr. Christopher Gledhill, Field Party Chief

Date \_\_\_\_\_

**Approved by:**

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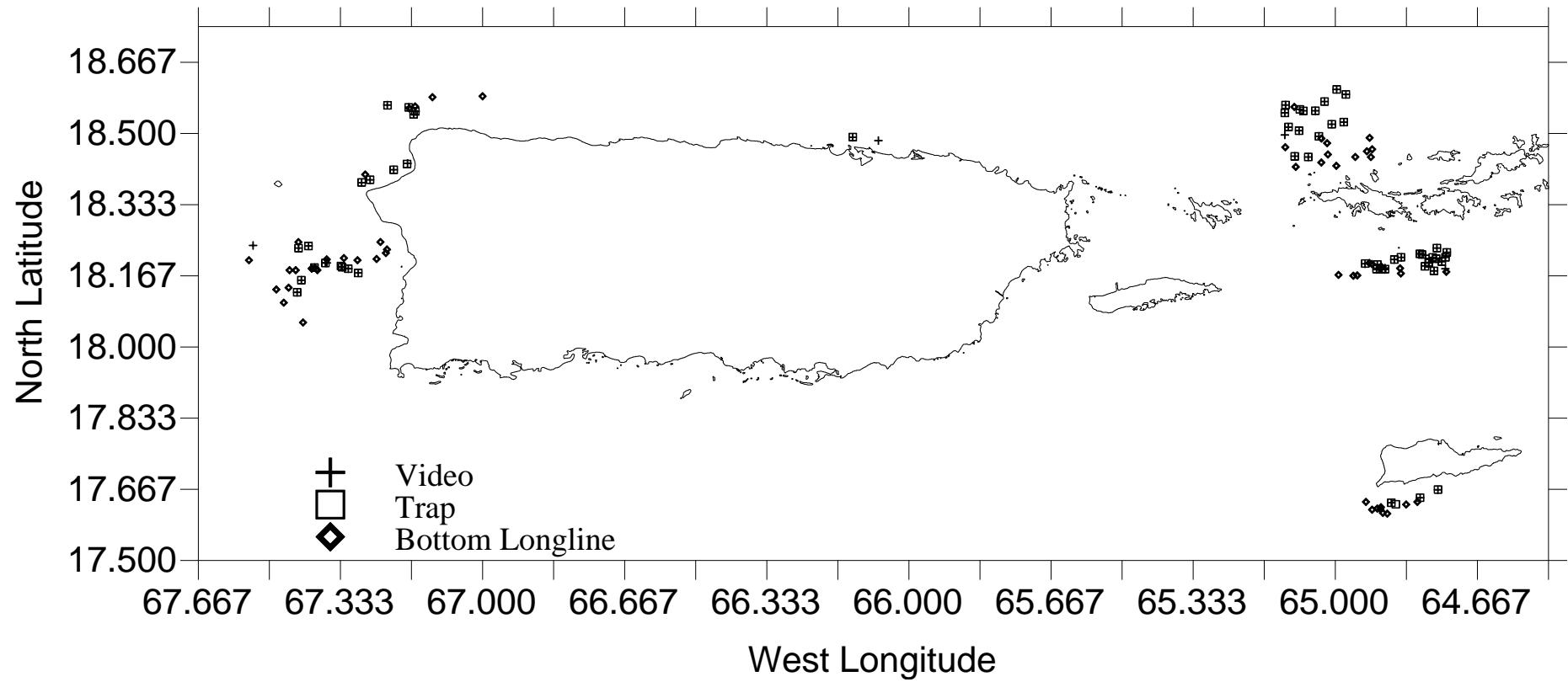
Dr. Lisa Desfosse  
Director, Mississippi Laboratory

Date \_\_\_\_\_

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Dr. Bonnie Ponwith  
Director, SEFSC

Date \_\_\_\_\_



**Figure 1.** Location of stations sampled during *Oregon II* Survey R2-09-01(285).

Table 1. Stations sampled during *Oregon II* Cruise R2-09-01(285) (VC=Video Cameras, TR=Chevron Fish Trap, BL = Bottom Longline).

Station	Latitude	Longitude	Depth (m)	Area	Gear	Catch (kg)
1	18° 29.460'	66° 7.910'	95.60	Puerto Rico	VC, CTD	-
2	18° 29.500'	66° 7.900'	119.70	Puerto Rico	TR	0.75
3	18° 29.000'	66° 4.300'	68.60	Puerto Rico	VC, CTD	-
4	18° 33.100'	67° 9.410'	62.80	Puerto Rico	VC, CTD	-
5	18° 33.110'	67° 9.450'	64.40	Puerto Rico	TR	0.00
6	18° 33.540'	67° 10.310'	98.80	Puerto Rico	BL, CTD	40.80
7	18° 33.800'	67° 9.490'	124.10	Puerto Rico	BL, CTD	111.60
8	18° 35.230'	67° 0.000'	237.90	Puerto Rico	BL, CTD	9.40
9	18° 35.100'	67° 7.050'	242.40	Puerto Rico	BL, CTD	2.80
10	18° 34.000'	67° 13.410'	61.50	Puerto Rico	VC, CTD	-
11	18° 33.960'	67° 13.370'	61.10	Puerto Rico	TR	0.00
12	18° 33.680'	67° 10.400'	113.80	Puerto Rico	VC, CTD	-
13	18° 33.670'	67° 10.390'	113.30	Puerto Rico	TR	17.47
14	18° 32.690'	67° 9.690'	55.30	Puerto Rico	VC, CTD	-
15	18° 32.690'	67° 9.700'	55.40	Puerto Rico	TR	0.00
16	18° 25.800'	67° 10.560'	112.70	Puerto Rico	VC, CTD	-
17	18° 25.710'	67° 10.630'	95.10	Puerto Rico	TR	0.00
18	18° 24.240'	67° 16.510'	371.90	Puerto Rico	BL, CTD	3.30
19	18° 14.750'	67° 14.370'	224.70	Puerto Rico	BL, CTD	3.60
20	18° 13.700'	67° 13.450'	191.60	Puerto Rico	BL, CTD	9.00
21	18° 13.200'	67° 13.600'	188.40	Puerto Rico	BL, CTD	12.50
22	18° 12.360'	67° 14.910'	187.50	Puerto Rico	BL, CTD	3.40
23	18° 23.090'	67° 17.010'	67.10	Puerto Rico	VC, CTD	-
24	18° 23.130'	67° 17.010'	68.30	Puerto Rico	TR	0.00
25	18° 23.480'	67° 15.820'	79.30	Puerto Rico	VC, CTD	-
26	18° 23.500'	67° 15.830'	82.00	Puerto Rico	TR	0.00
27	18° 24.900'	67° 12.500'	75.00	Puerto Rico	VC, CTD	-
28	18° 24.900'	67° 12.500'	75.20	Puerto Rico	TR	0.97
29	18° 11.290'	67° 19.880'	99.20	Puerto Rico	VC, CTD	-
30	18° 11.380'	67° 19.930'	145.60	Puerto Rico	TR	13.61
31	18° 12.190'	67° 17.600'	268.60	Puerto Rico	BL, CTD	6.00
32	18° 12.490'	67° 19.510'	303.10	Puerto Rico	BL, CTD	0.80
33	18° 12.310'	67° 21.930'	219.50	Puerto Rico	BL, CTD	19.00
34	18° 10.800'	67° 23.240'	63.80	Puerto Rico	BL, CTD	66.20
35	18° 11.140'	67° 23.600'	108.90	Puerto Rico	BL, CTD	3.50
36	18° 10.410'	67° 17.500'	60.60	Puerto Rico	VC, CTD	-
37	18° 10.400'	67° 17.490'	60.30	Puerto Rico	TR	0.00
38	18° 11.000'	67° 18.890'	79.90	Puerto Rico	VC, CTD	-
39	18° 11.000'	67° 18.900'	80.40	Puerto Rico	TR	0.00
40	18° 11.200'	67° 19.740'	83.50	Puerto Rico	VC, CTD	-
41	18° 11.200'	67° 19.750'	82.60	Puerto Rico	TR	6.55
42	18° 11.810'	67° 21.910'	99.50	Puerto Rico	VC, CTD	-
43	18° 14.740'	67° 25.910'	227.50	Puerto Rico	BL, CTD	9.10
44	18° 11.030'	67° 24.040'	138.30	Puerto Rico	BL, CTD	49.40
45	18° 11.020'	67° 24.020'	130.70	Puerto Rico	BL, CTD	39.10

Table 1. Continued.

Station	Latitude	Longitude	Depth (m)	Area	Gear	Catch (kgs)
46	18° 10.790'	67° 26.290'	177.20	Puerto Rico	BL, CTD	7.40
47	18° 10.790'	67° 27.160'	196.40	Puerto Rico	BL, CTD	8.40
48	18° 11.170'	67° 23.650'	115.20	Puerto Rico	VC, CTD	-
49	18° 11.160'	67° 23.650'	113.50	Puerto Rico	TR	1.69
50	18° 11.800'	67° 22.110'	108.60	Puerto Rico	VC, CTD	-
51	18° 11.800'	67° 22.110'	109.10	Puerto Rico	TR	3.32
52	18° 14.200'	67° 24.490'	67.40	Puerto Rico	VC, CTD	-
53	18° 14.190'	67° 24.500'	67.80	Puerto Rico	TR	0.44
54	18° 13.900'	67° 25.890'	69.70	Puerto Rico	VC, CTD	-
55	18° 13.890'	67° 25.890'	72.80	Puerto Rico	TR	0.00
56	18° 14.270'	67° 32.290'	112.20	Puerto Rico	VC, CTD	-
57	18° 12.190'	67° 32.870'	212.10	Puerto Rico	BL, CTD	2.50
58	18° 8.080'	67° 29.020'	309.30	Puerto Rico	BL, CTD	0.00
59	18° 8.330'	67° 27.290'	199.90	Puerto Rico	BL, CTD	14.20
60	18° 6.230'	67° 27.970'	216.80	Puerto Rico	BL, CTD	5.30
61	18° 3.440'	67° 25.260'	208.60	Puerto Rico	BL	0.00
62	18° 7.680'	67° 26.090'	63.50	Puerto Rico	VC, CTD	-
63	18° 7.690'	67° 26.090'	63.90	Puerto Rico	TR	0.00
64	18° 9.380'	67° 25.500'	88.60	Puerto Rico	VC	-
65	18° 9.390'	67° 25.500'	87.50	Puerto Rico	TR	1.62
66	17° 38.230'	64° 55.690'	211.90	St Croix	BL, CTD	192.90
67	17° 37.140'	64° 54.820'	253.70	St Croix	BL, CTD	46.50
68	17° 36.680'	64° 53.300'	267.60	St Croix	BL, CTD	6.50
69	17° 36.580'	64° 52.690'	278.30	St Croix	BL, CTD	0.80
70	17° 37.870'	64° 50.030'	238.80	St Croix	BL, CTD	0.60
71	17° 39.930'	64° 45.560'	34.50	St Croix	VC, CTD	-
72	17° 39.960'	64° 45.550'	31.20	St Croix	TR	0.44
73	17° 38.810'	64° 48.060'	32.30	St Croix	VC, CTD	-
74	17° 38.820'	64° 48.070'	32.00	St Croix	TR	0.00
75	17° 38.110'	64° 52.120'	37.10	St Croix	VC, CTD	-
76	17° 38.110'	64° 52.120'	41.50	St Croix	TR	0.00
77	17° 37.900'	64° 51.490'	179.70	St Croix	TR	0.38
78	17° 37.490'	64° 53.580'	216.50	St Croix	BL, CTD	1.90
79	17° 38.230'	64° 48.450'	261.70	St Croix	BL, CTD	5.20
80	17° 37.210'	64° 53.650'	235.70	St Croix	BL, CTD	1.80
81	17° 37.290'	64° 54.090'	231.90	St Croix	BL, CTD	46.30
82	18° 11.690'	64° 55.810'	52.20	South St John, St Thomas	VC, CTD	-
83	18° 11.730'	64° 55.790'	54.30	South St John, St Thomas	TR	0.00
84	18° 10.880'	64° 54.200'	55.10	South St John, St Thomas	VC, CTD	-
85	18° 10.940'	64° 54.200'	55.10	South St John, St Thomas	TR	0.00
86	18° 11.580'	64° 54.100'	49.90	South St John, St Thomas	VC, CTD	-
87	18° 11.590'	64° 54.090'	50.20	South St John, St Thomas	TR	0.00
88	18° 10.900'	64° 53.400'	50.20	South St John, St Thomas	VC, CTD	-
89	18° 10.900'	64° 53.400'	50.30	South St John, St Thomas	TR	0.00
90	18° 10.890'	64° 53.000'	49.70	South St John, St Thomas	VC, CTD	-

Table 1. Continued.

Station	Latitude	Longitude	Depth (m)	Area	Gear	Catch (kgs)
91	18° 10.940'	64° 52.990'	50.40	South St John, St Thomas	TR	5.49
92	18° 11.090'	64° 53.010'	48.80	South St John, St Thomas	VC, CTD	-
93	18° 11.800'	64° 55.200'	52.30	South St John, St Thomas	BL, CTD	111.00
94	18° 11.660'	64° 54.850'	51.10	South St John, St Thomas	BL, CTD	5.30
95	18° 11.320'	64° 53.550'	49.50	South St John, St Thomas	BL, CTD	6.60
96	18° 12.290'	64° 51.700'	50.60	South St John, St Thomas	VC, CTD	-
97	18° 12.290'	64° 51.690'	49.30	South St John, St Thomas	TR	0.00
98	18° 12.590'	64° 50.710'	52.40	South St John, St Thomas	VC, CTD	-
99	18° 12.610'	64° 50.760'	52.50	South St John, St Thomas	TR	0.00
100	18° 13.090'	64° 48.110'	50.60	South St John, St Thomas	VC, CTD	-
101	18° 13.090'	64° 48.100'	50.80	South St John, St Thomas	TR	0.00
102	18° 13.000'	64° 47.800'	53.30	South St John, St Thomas	VC, CTD	-
103	18° 13.000'	64° 47.800'	53.10	South St John, St Thomas	TR	0.00
104	18° 11.400'	64° 47.400'	55.40	South St John, St Thomas	VC, CTD	-
105	18° 11.330'	64° 47.380'	54.70	South St John, St Thomas	TR	1.03
106	18° 12.890'	64° 47.310'	50.70	South St John, St Thomas	VC, CTD	-
107	18° 10.130'	64° 59.550'	498.60	South St John, St Thomas	BL, CTD	27.40
108	18° 10.010'	64° 57.460'	670.30	South St John, St Thomas	BL, CTD	3.10
109	18° 10.060'	64° 56.910'	719.30	South St John, St Thomas	BL	0.00
110	18° 10.330'	64° 50.770'	694.40	South St John, St Thomas	BL	27.50
111	18° 11.790'	64° 46.810'	55.50	South St John, St Thomas	VC, CTD	-
112	18° 11.770'	64° 46.820'	55.10	South St John, St Thomas	TR	0.34
113	18° 11.890'	64° 46.810'	54.20	South St John, St Thomas	VC, CTD	-
114	18° 11.930'	64° 46.850'	53.90	South St John, St Thomas	TR	0.00
115	18° 12.590'	64° 46.300'	53.00	South St John, St Thomas	VC, CTD	-
116	18° 12.590'	64° 46.290'	52.90	South St John, St Thomas	TR	0.00
117	18° 12.390'	64° 45.800'	52.30	South St John, St Thomas	VC, CTD	-
118	18° 12.400'	64° 45.800'	52.40	South St John, St Thomas	TR	0.00
119	18° 10.690'	64° 46.100'	35.60	South St John, St Thomas	VC, CTD	-
120	18° 10.690'	64° 46.110'	36.20	South St John, St Thomas	TR	5.65
121	18° 10.990'	64° 44.510'	73.50	South St John, St Thomas	VC, CTD	-
122	18° 11.060'	64° 50.880'	542.40	South St John, St Thomas	BL, CTD	26.00
123	18° 10.560'	64° 44.380'	546.20	South St John, St Thomas	BL, CTD	0.00
124	18° 13.300'	64° 44.310'	51.60	South St John, St Thomas	VC, CTD	-
125	18° 13.290'	64° 44.310'	51.50	South St John, St Thomas	TR	0.69
126	18° 12.590'	64° 44.510'	51.20	South St John, St Thomas	VC, CTD	-
127	18° 12.600'	64° 44.500'	51.10	South St John, St Thomas	TR	0.47
128	18° 11.990'	64° 45.010'	52.00	South St John, St Thomas	VC, CTD	-
129	18° 12.000'	64° 45.010'	52.00	South St John, St Thomas	TR	0.00
130	18° 13.900'	64° 45.700'	47.10	South St John, St Thomas	VC, CTD	-
131	18° 13.900'	64° 45.700'	45.90	South St John, St Thomas	TR	0.00
132	18° 25.310'	65° 5.560'	51.10	North St John, St Thomas	BL, CTD	6.15
133	18° 25.920'	65° 1.970'	52.90	North St John, St Thomas	BL, CTD	33.20
134	18° 28.640'	65° 1.150'	56.70	North St John, St Thomas	BL, CTD	0.00
135	18° 29.290'	65° 1.950'	57.70	North St John, St Thomas	BL, CTD	27.00
136	18° 28.070'	65° 7.040'	51.80	North St John, St Thomas	BL, CTD	20.00

Table 1. Continued.

Station	Latitude	Longitude	Depth (m)	Area	Gear	Catch (kgs)
137	18° 26.810'	65° 5.700'	53.10	North St John, St Thomas	VC, CTD	-
138	18° 26.790'	65° 5.710'	54.00	North St John, St Thomas	TR	0.00
139	18° 26.690'	65° 3.810'	54.20	North St John, St Thomas	VC, CTD	-
140	18° 26.700'	65° 3.810'	54.00	North St John, St Thomas	TR	0.00
141	18° 29.600'	65° 2.300'	58.00	North St John, St Thomas	VC, CTD	-
142	18° 29.600'	65° 2.300'	59.00	North St John, St Thomas	TR	0.00
143	18° 30.390'	65° 5.100'	58.40	North St John, St Thomas	VC, CTD	-
144	18° 30.390'	65° 5.100'	58.50	North St John, St Thomas	TR	0.00
145	18° 30.890'	65° 6.610'	56.70	North St John, St Thomas	VC, CTD	-
146	18° 30.920'	65° 6.580'	55.80	North St John, St Thomas	TR	1.75
147	18° 33.730'	65° 5.770'	65.50	North St John, St Thomas	BL, CTD	7.85
148	18° 27.050'	65° 1.040'	53.90	North St John, St Thomas	BL, CTD	28.50
149	18° 25.460'	64° 59.850'	53.90	North St John, St Thomas	BL, CTD	6.50
150	18° 33.190'	65° 2.810'	46.10	North St John, St Thomas	VC, CTD	-
151	18° 33.190'	65° 2.810'	44.80	North St John, St Thomas	TR	0.00
152	18° 33.190'	65° 4.510'	63.00	North St John, St Thomas	VC, CTD	-
153	18° 33.180'	65° 4.500'	63.20	North St John, St Thomas	TR	0.00
154	18° 33.390'	65° 5.010'	60.00	North St John, St Thomas	VC, CTD	-
155	18° 33.390'	65° 5.000'	60.70	North St John, St Thomas	TR	0.00
156	18° 34.000'	65° 7.000'	72.50	North St John, St Thomas	VC, CTD	-
157	18° 34.000'	65° 7.000'	72.60	North St John, St Thomas	TR	0.00
158	18° 32.900'	65° 7.100'	53.90	North St John, St Thomas	VC, CTD	-
159	18° 32.890'	65° 7.100'	54.40	North St John, St Thomas	TR	0.00
160	18° 29.790'	65° 7.110'	55.60	North St John, St Thomas	VC, CTD	-
161	18° 26.700'	64° 57.190'	54.30	North St John, St Thomas	BL, CTD	35.60
162	18° 27.500'	64° 55.560'	54.30	North St John, St Thomas	BL, CTD	67.00
163	18° 26.690'	64° 54.990'	53.50	North St John, St Thomas	BL, CTD	6.15
164	18° 27.780'	64° 54.810'	54.30	North St John, St Thomas	BL, CTD	30.30
165	18° 29.390'	64° 55.170'	53.20	North St John, St Thomas	BL, CTD	70.10
166	18° 34.490'	65° 1.510'	55.10	North St John, St Thomas	VC, CTD	-
167	18° 34.490'	65° 1.510'	55.50	North St John, St Thomas	TR	0.00
168	18° 35.490'	64° 58.510'	50.90	North St John, St Thomas	VC, CTD	-
169	18° 35.490'	64° 58.510'	50.70	North St John, St Thomas	TR	0.00
170	18° 36.190'	64° 59.810'	62.70	North St John, St Thomas	VC, CTD	-
171	18° 36.190'	64° 59.800'	62.30	North St John, St Thomas	TR	0.00
172	18° 31.300'	65° 0.500'	54.30	North St John, St Thomas	VC, CTD	-
173	18° 31.300'	65° 0.500'	53.80	North St John, St Thomas	TR	0.13
174	18° 31.590'	64° 58.800'	56.20	North St John, St Thomas	VC, CTD	-
175	18° 31.600'	64° 58.810'	55.90	North St John, St Thomas	TR	0.00

Table 2. Catch totals from chevron fish traps and bottom longline gear during *Oregon II* Cruise R2-09-01(285).

Gear	Taxon	Common Name	Number	Weight (kgs)
Trap	<i>Caranx cryos</i>	blue runner	2	2.583
	<i>Cephalopholis fluva</i>	coney	11	2.920
	<i>Chaetodon striatus</i>	banded butterflyfish	1	0.045
	<i>Epinephelus guttatus</i>	red hind	4	1.748
	<i>Gymnothorax funebris</i>	green moray	1	5.500
	<i>Haemulon fulvineatum</i>	French grunt	3	0.356
	<i>Lutjanus buccanella</i>	blackfin snapper	109	24.320
	<i>Lutjanus synagris</i>	lane snapper	77	25.188
	<i>Paranthias furcifer</i>	creole-fish	1	0.154
	<i>Rhomboplites aurorubens</i>	vermillion snapper	2	0.166
Longline	<i>Xanthichthys ringens</i>	sargassum triggerfish	1	0.148
	<i>Carcharhinus sp.</i>		1	40.800
	<i>Carcharhinus acronotus</i>	blacknose shark	9	25.150
	<i>Carcharhinus altimus</i>	bignose shark	4	12.800
	<i>Carcharhinus falciformis</i>	silky shark	1	3.300
	<i>Carcharhinus perezi</i>	Caribbean reef shark	1	28.500
	<i>Carcharhinus plumbeus</i>	sandbar shark	2	63.000
	<i>Centrophorus sp.</i>	gulper shark	9	47.000
	<i>Conger esculentus</i>		2	6.600
	<i>Dalatias licha</i>	kitefin shark	3	24.000
	<i>Dasyatis americana</i>	southern stingray	8	115.400
	<i>Epinephelus guttatus</i>	red hind	2	2.100
	<i>Epinephelus morio</i>	red grouper	1	6.500
	<i>Galeocerdo cuvier</i>	tiger shark	4	282.600
	<i>Ginglymostoma cirratum</i>	nurse shark	6	297.200
	<i>Gymnothorax moringa</i>	spotted moray	3	2.600
	<i>Gymnothorax congerus</i>	saddled moray	2	2.300
	<i>Hexanchus nakamurai</i>	bigeye sixgill shark	1	0.700
	<i>Hydrolagus cubana</i>	chimaera	1	2.300
	<i>Lutjanus analis</i>	button snapper	3	11.200
	<i>Lutjanus buccanella</i>	blackfin snapper	4	5.200
	<i>Lutjanus jocu</i>	dog snapper	4	19.400
	<i>Lutjanus synagris</i>	lane snapper	2	2.500
	<i>Lutjanus vivanus</i>	silk snapper	2	3.700
	<i>Mustelus sp.</i>	smoothhound	42	120.200
	<i>Ophichthus rex</i>	king snake eel	2	3.600
	<i>Rhizoprionodon porosus</i>	Caribbean sharpnose shark	6	17.950
	<i>Ruvettus pretiosus</i>	oilfish	1	13.000
	<i>Sphyraena barracuda</i>	great barracuda	1	4.850
	<i>Sphyraena lewini</i>	scalloped hammerhead	3	102.000
	<i>Squalus cubensis</i>	Cuban dogfish	5	8.600

Table 3. Mean lengths of fish captured by trap and bottom longline during *Oregon II* Cruise R2-09-01(285) (FL=fork length; TL= total length; DW= disc width).

Gear	Taxon	Measurement	n	Mean	Minimum	Maximum	SD
Trap	<i>Caranx cryos</i>	FL	2	410.00	380	440	42.43
	<i>Cephalopholis fluva</i>	TL	13	261.31	232	287	20.02
	<i>Chaetodon striatus</i>	TL	1	118.00	118	118	
	<i>Epinephelus guttatus</i>	TL	5	317.40	288	367	31.56
	<i>Gymnothorax funebris</i>	TL	1	1190.00	1190	1190	
	<i>Haemulon falvoineatum</i>	FL	3	181.33	174	187	6.66
	<i>Lutjanus buccanella</i>	FL	109	235.04	305	177	26.12
	<i>Lutjanus synagris</i>	FL	77	267.22	163	354	48.24
	<i>Paranthias furcifer</i>	FL	1	219.00	219	219	
	<i>Rhomboplites aurorubens</i>	FL	2	201.00	200	202	1.41
	<i>Xanthichthys ringens</i>	FL	1	184.00	184	184	
Longline	<i>Carcharhinus acronotus</i>	TL	9	726.33	569	1073	208.38
	<i>Carcharhinus altimus</i>	TL	4	813.75	710	860	69.69
	<i>Carcharhinus falciformis</i>	TL	1	900.00	900	900	
	<i>Carcharhinus perezi</i>	TL	1	1470.00	1470	1470	
	<i>Carcharhinus plumbeus</i>	FL	2	1370.00	1240	1500	183.85
	<i>Centrophorus sp.</i>	TL	9	948.44	825	1045	85.25
	<i>Conger esculentus</i>	TL	2	1113.00	1100	1126	18.38
	<i>Dalatias licha</i>	TL	3	1323.33	1160	1605	244.97
	<i>Dasyatis americana</i>	DW	8	1425.25	467	1750	432.45
	<i>Epinephelus guttatus</i>	TL	2	410.50	355	466	78.49
	<i>Epinephelus morio</i>	TL	1	765.00	765	765	
	<i>Galeocerdo cuvier</i>	TL	3	2186.67	2000	2500	273.01
	<i>Ginglymostoma cirratum</i>	TL	6	2151.33	1888	2400	200.57
	<i>Gymnothorax conperus</i>	TL	2	875.00	600	1150	388.91
	<i>Gymnothorax moringa</i>	TL	3	753.33	705	840	75.22
	<i>Hexanchus nakamurai</i>	TL	1	510.00	510	510	
	<i>Hydrolagus cubana</i>	TL	1	640.00	640	640	
	<i>Lutjanus analis</i>	FL	3	596.33	550	654	52.92
	<i>Lutjanus buccanella</i>	FL	4	419.75	311	492	81.16
	<i>Lutjanus jocu</i>	FL	4	649.75	595	687	41.16
	<i>Lutjanus synagris</i>	FL	2	391.50	259	524	187.38
	<i>Lutjanus vivanus</i>	FL	2	531.50	363	700	238.29
	<i>Mustelus sp.</i>	TL	42	910.60	605	1100	119.94
	<i>Ophichthus rex</i>	TL	2	1025.00	950	1100	106.07
	<i>Rhizoprionodon porosus</i>	TL	6	843.83	632	902	104.95
	<i>Ruvettus pretiosus</i>	TL	1	1300.00	1300	1300	
	<i>Sphyraena barracuda</i>	TL	1	965.00	965	965	
	<i>Sphyraena lewini</i>	TL	3	1780.00	1530	2210	374.03
	<i>Squalus cubensis</i>	TL	5	629.20	540	695	61.67

Table 4. Biological samples taken and fish tagged during *Oregon II* Cruise R2-09-01(285).

Gear		Otoliths	Gonads	Tissue	Tagged
Trap	<i>Caranx cryos</i>	0	0	1	
	<i>Cephalopholis fluva</i>	13	10	9	
	<i>Chaetodon striatus</i>	0	0	1	
	<i>Epinephelus guttatus</i>	5	4	5	
	<i>Gymnothorax funebris</i>	0	0	0	
	<i>Haemulon falvolineatum</i>	0	0	3	
	<i>Lutjanus buccanella</i>	37	16	11	
	<i>Lutjanus synagris</i>	25	5	8	
	<i>Paranthias furcifer</i>	0	0	1	
	<i>Rhomboplites aurorubens</i>	2	2	2	
Longline	<i>Xanthichthys ringens</i>	1 <sup>a</sup>	0	1	
	<i>Carcharhinus acronotus</i>	0	0	8	7
	<i>Carcharhinus altimus</i>	0	0	4	2
	<i>Carcharhinus falciformis</i>	0	0	1	1
	<i>Carcharhinus perezi</i>	0	0	1	
	<i>Carcharhinus plumbeus</i>	0	0	2	2
	<i>Centrophorus sp.</i>	0	0	9	3
	<i>Conger esculentus</i>	0	0	1	
	<i>Dalatias licha</i>	0	0	3	1
	<i>Dasyatis americana</i>	0	0	1	
	<i>Epinephelus guttatus</i>	2	2	2	
	<i>Epinephelus morio</i>	1	1	1	
	<i>Galeocerdo cuvier</i>	0	0	3	2
	<i>Ginglymostoma cirratum</i>	0	0	5	5
	<i>Gymnothorax conspersus</i>	0	0	2	
	<i>Gymnothorax moringa</i>	0	0	2	
	<i>Hexanchus nakamurai</i>	0	0	1	
	<i>Hydrolagus cubana</i>	0	1	1	
	<i>Lutjanus analis</i>	3	2	3	
	<i>Lutjanus buccanella</i>	4	4	4	
	<i>Lutjanus jocu</i>	4	4	4	
	<i>Lutjanus synagris</i>	2	2	1	
	<i>Lutjanus vivanus</i>	2	2	2	
	<i>Mustelus sp.</i>	0	0	14	23
	<i>Ophichthus rex</i>	0	0	1	
	<i>Rhizoprionodon porosus</i>	0	0	6	3
	<i>Ruvettus pretiosus</i>	1	1	1	
	<i>Sphyraena barracuda</i>	0	0	1	
	<i>Sphyraena lewini</i>	0	0	2	
	<i>Squalus cubensis</i>	0	0	2	1

<sup>a</sup> A dorsal spine was taken from the sargassum triggerfish.